Air Quality Permitting
Statement of Basis

July 15, 2005

Tier II Operating Permit and Permit to Construct No. T2-040124

Potlatch Corporation, St. Maries

Facility ID No. 009-00030

Prepared by:

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AIR QUALITY DIVISION

FINAL PERMIT

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Acronyms, Units, and Chemical Nomenclature

CO	carbon monoxide
DEQ	Department of Environmental Quality
EPA	Environmental Protection Agency
HAPs	Hazardous Air Pollutants
IDAPA	A numbering designation for all administrative rules in Idaho promulgated in accordance with the Idaho Administrative Procedures Act
NO_X	nitrogen oxides
O&M	operation and maintenance
PM	Particulate Matter
PM_{10}	Particulate Matter with an aerodynamic diameter less than or equal to a nominal 10 micrometers
PTC	Permit to Construct
Rules	*Rules for the Control of Air Pollution in Idaho*
SO_2	sulfur dioxide
T/yr	Tons per year
VOC	volatile organic compound

1. PURPOSE

The purpose for this memorandum is to satisfy the requirements of IDAPA 58.01.01 Sections 201 and 404.04, *Rules for the Control of Air Pollution in Idaho* (*Rules*) for Permits to Construct and Tier II operating permits.

2. FACILITY DESCRIPTION

The Hurst wood and wood-waste-fired boiler produces steam, which is used to heat four lumber-drying kilns. Various types of wood are dried in the kilns. The particulate emissions from the boiler are controlled by a multiclone and an electrostatic precipitator (ESP).

The oil and edge-seal process applies coatings to plywood panels making them suitable for use as concrete forming material. Untreated plywood panels are placed one at a time on a conveying system and transported through a modified glue spreader that uses two large rollers to apply the coating to the upper and lower surfaces of the panels. The upper surface of the panels is flood-coated with the release agent using a low-pressure sprayer nozzle before the panel goes through the spreader rolls. Excess release agent is collected and recycled in the lower reservoir under the spreader. The panels are then stacked, and an edge-sealing compound is sprayed on the edges of the stacked panels.

3. FACILITY / AREA CLASSIFICATION

The facility is defined as a major facility because the facility is permitted to emit greater than 100 tons per year each of VOC and CO. Emissions from the part of the facility located on tribal lands are not included in this analysis or permit. The AIRS/AFS facility classification is A, because the facility has a potential to emit greater than 100 tons per year of VOC and CO. This facility is a lumber drying facility, SIC 2421.

Potlatch St. Maries, Benewah County, Idaho, is located in AQCR 62 and UTM zone 11. The area is classified as unclassifiable for federal and state criteria air pollutants. There are no Class I areas within 10 kilometers (km) of the facility.

The AIRS information provided in Appendix A defines the classification for each regulated air pollutant at Potlatch Corporation. This required information is entered into the EPA AIRS database.

4. APPLICATION SCOPE

Potlatch Corporation's current permit requires that the power input of the ESP for the boiler be tested and operated within a range of power inputs. The facility originally requested that only the lower limit for power input be tested and set as a limit. After research and discussions with the facility, the manufacturer of the ESP, and the Coeur d'Alene Regional Office, it was determined that using the power input to the ESP as a indicator of particulate control is not valid for control of particulate from wood combustion. An ESP works by automatically adjusting the amount of power required to control the amount of particulate being processed. Therefore, low particulate concentrations in the exhaust stream requires low power from the ESP. Because the amount of particulate emitted from wood-fired boilers is widely variable during typical operation due the inconsistency of the fuel (as compared to a more evenly-burning fuel such as coal or gas), the power input will also be variable and not an indicator of control. Therefore, it was decided to eliminate the limits on power input. Instead, it was decided that testing the emissions from the ESP, maintaining the ESP equipment properly, and ensuring that the ESP is in operation when the boiler is in use will be sufficient to ensure that the allowable particulate emissions are not exceeded. This strategy will also be used when modifying the facility's Tier I operating permit.

Clarification to some of the permit conditions were made as described in Section 6 of this statement of basis. Two permit conditions were deleted because they were originally incorporated from a PTC and are now addressed in the Facility-wide section of the PTC/Tier II operating permit.

The expiration date of the permit was extended from April 7, 2009 to May 12, 2009, which is five years from the issue date of the original permit to construct and Tier II operating permit, permit No. T2-020121. When the original permit was issued, the issue date section was updated to the actual issue date, but the expiration date was inadvertently not updated to five years after the original issue date. Because this current permit action is a revision and not a renewal, the expiration date remains at five years after the issuance of the original Tier II operating permit.

There are no other changes to the permit.

4.1 Application Chronology

10/20/04	Application received
11/18/04	Application declared complete
1/13/05	Draft Tier II operating permit issued
3/4/05	Proposed Tier II operating permit issued
5/6/05	Comments received from Potlatch Corporation
6/14/05	Comments received from Coeur d'Alene Regional Office

5. PERMIT ANALYSIS

This section of the Statement of Basis describes the regulatory requirements for this Tier II and PTC.

5.1 Fee Review

Per IDAPA 58.01.01.407, this permit modification required minimal engineering analysis. Therefore, the permit processing fee is $500.00. This fee was paid on March 16, 2005. The facility is a major source and is subject to Title V registration fees. The facility is current with these fees.

5.2 Regional Review of Draft Permit

A draft permit was sent to the Coeur d'Alene Regional Office on January 13, 2005. Comments were received on January 11 and 12, 2005, February 23, 2005, and June 14, 2005. The comments were incorporated.

5.3 Facility Review of Draft Permit

A draft permit was provided for facility review on January 13, 2005. The comments were modified due to Coeur d'Alene Regional Office comments, and agreed to by the facility in an e-mail dated June 22, 2005.

6. PERMIT CONDITIONS

The permit conditions were modified as follows:

Original Permit Condition 2.8

The permittee shall conduct a monthly facility wide inspection of potential sources of visible emissions during daylight hours and under normal operating conditions. The visible emissions inspection shall consist of a see/no see evaluation for each potential source. If any visible emissions are present from any point of emission, the permittee shall either take appropriate corrective action as expeditiously as practicable, or perform a Method 9 opacity test in accordance with the procedures outlined in IDAPA 58.01.01.625. A minimum of 30 observations shall be recorded when conducting the opacity test. If opacity is greater than 20% for a period or periods aggregating more than three minutes in any 60 minute period, the permittee shall take all necessary corrective action and report the exceedance in accordance with IDAPA 58.01.01.130-136. If the monthly see/no see observations indicate that no visible emissions are observed for four consecutive months or if Method 9 observations indicate that the opacity is below 20% for four consecutive months, or any combination of see/no see or Method 9 observations indicate no visible emissions or opacity, the frequency of observations decreases to once per quarter. If any quarterly Method 9 observations indicate opacity greater than 20%, the observation frequency reverts to monthly. The permittee shall maintain records of the results of each monthly visible emissions inspection and each opacity test when conducted. The records shall include, at a minimum, the date and results of each inspection and test and a description of the following: the permittee's assessment of the conditions existing at the time visible emissions are present (if observed), any corrective action taken in response to the visible emissions, and the date corrective action was taken.

Revised Permit Condition 2.8

The permittee shall conduct a monthly facility wide inspection of potential sources of visible emissions during daylight hours and under normal operating conditions. The visible emissions inspection shall consist of a see/no see evaluation for each potential source. If any visible emissions are present from any point of emission, the permittee shall either take appropriate corrective action as expeditiously as practicable, or perform a Method 9 opacity test in accordance with the procedures outlined in IDAPA 58.01.01.625. A minimum of 30 observations shall be recorded when conducting the opacity test. If opacity is greater than 20% for a period or periods aggregating more than three minutes in any 60 minute period, the permittee shall take all necessary corrective action and report the exceedance in accordance with IDAPA 58.01.01.130-136. If the monthly see/no see observations indicate that no visible emissions are observed for four consecutive months or if Method 9 observations indicate that the opacity is below 20% for four consecutive months, or any combination of see/no see or Method 9 observations indicate no visible emissions or opacity exceedances, the frequency of observations decreases to once per quarter. If any quarterly Method 9 observations indicate opacity greater than 20%, the observation frequency reverts to monthly. The permittee shall maintain records of the results of each monthly visible emissions inspection and each opacity test when conducted. The records shall include, at a minimum, the date and results of each inspection and test and a description of the following: the permittee's assessment of the conditions existing at the time visible emissions are present (if observed), any corrective action taken in response to the visible emissions, and the date corrective action was taken.

Permit Condition 2.8 was revised to add the word, "exceedances" for clarification as shown in this excerpt from the permit condition:

If the monthly see/no see observations indicate that no visible emissions are observed for four consecutive months or if Method 9 observations indicate that the opacity is below 20% for four consecutive months, or any combination of see/no see or Method 9 observations indicate no visible emissions or opacity exceedances, the frequency of observations decreases to once per quarter.

A performance test was conducted on August 4 and 5, 2004, in which compliance with the particulate limits were verified for operation using one T/R set and two T/R sets. The steaming rate measured when

only one T/R set was used was less than the steaming rate measured when both T/R sets were in operation. Permit Condition 3.3.2 was rewritten to clarify that the allowable steaming rate will be limited to the steaming rate measured during the test. Unless further testing demonstrates compliance with the particulate limits at a higher steaming rate, the steaming rate is limited to a lower value, as tested, when only one T/R set is in operation.

Original Permit Condition 3.2

The PM and PM_{10} emissions from the Hurst boiler are controlled by a multiclone and an electrostatic precipitator (ESP).

Revised Permit Condition 3.2

The PM, PM_{10}, and opacity emissions from the Hurst boiler are controlled by a multiclone and an electrostatic precipitator (ESP).

This change was made to clarify that the opacity is also controlled by the particulate control equipment.

Original Permit Condition 3.3.1

3.3.1 An ESP and a multiclone shall be used to control PM and PM_{10} emissions from the Hurst boiler. The multiclone and ESP shall be maintained in good working order and operated as efficiently as practical in accordance with the Operations and Maintenance (O&M) manual specifications, required by Permit Condition 3.12.

Revised Permit Condition 3.3.1

3.3.1 An ESP and a multiclone shall be used to control PM, PM_{10}, and opacity emissions from the Hurst boiler. The multiclone and ESP shall be maintained in good working order and operated as efficiently as practical in accordance with the Operations and Maintenance (O&M) manual specifications, required by Permit Condition 3.12.

This change was made to clarify that the opacity is also controlled by the particulate control equipment.

Original Permit Condition 3.3.2

If performance testing done in accordance with Permit Conditions 3.7 and 3.9 verifies compliance with Permit Conditions 2.7 and 2.13 when operating only one of the transformer-rectifier (T/R) sets on the ESP, then the boiler may be operated for a reasonable period of time using only one T/R set should one become nonfunctional. Repairs to the second T/R set shall be made as expeditiously as possible.

Modified Permit Condition 3.3.2

If performance testing done in accordance with Permit Conditions 3.7 and 3.9 verifies compliance with Permit Conditions 2.7 and 2.13 when operating only one of the transformer-rectifier (T/R) sets on the ESP, then the boiler may be operated for a reasonable period of time using only one T/R set should one become nonfunctional. While operating only one of the T/R sets, the steaming rate shall not exceed the average steaming rate as defined in Permit Condition 3.6.1 measured during the performance test used to establish the steaming rate limit for operation using only one T/R set. Repairs to the second T/R set shall be made as expeditiously as possible.

Original Permit Condition 3.4

The permittee shall install, calibrate, maintain, and operate, in accordance with the O&M manual specifications, equipment to continuously measure the secondary voltage and amperage applied by each T/R set to the discharge electrodes.

Revised Permit Condition 3.4

The permittee shall install, calibrate, maintain, and operate, in accordance with the O&M manual specifications, equipment to continuously measure the secondary voltage and amperage applied by each T/R set to the discharge electrodes while the boiler is operating.

The phrase, "while the boiler is operating" was added to clarify that the secondary voltage and amperage is not required to be operating if the boiler is not operating.

Original Permit Condition 3.6.1

The average steaming rate is defined as the running three-hour average of the steaming rates, as determined from a continuous steaming-rate recorder. The average steaming rate shall be maintained at or below 120% of the average steaming rate attained during the most recent compliance test conducted pursuant to the permit that demonstrates compliance with Permit Conditions 2.7 and 2.13. If the tested emission rate is above 0.066 gr/dscf at 8% oxygen, when combusting wood product, the maximum allowable steaming rate shall be limited to the steaming rate calculated using the following equation:

$$\text{Max. allowable avg. steam rate} = \frac{\text{(avg. steam rate during test x 0.08 gr/dscf at 8\% oxygen)}}{\text{(tested grain loading at 8\% oxygen)}}$$

The permittee may conduct additional compliance tests during the permit term to revise the allowable steaming rate, so long as the compliance tests conform to all requirements of this permit. Except during compliance testing, as provided for in Permit Condition 3.9, whenever the steaming rate exceeds the allowable steaming rate, the permittee shall take corrective action within a reasonable time, but no longer than 24 hours from the discovery of the exceedance, to bring the steaming rate to the allowable rate or below. Deviations from this allowable operating rate shall not constitute a violation of this permit, unless the permittee fails to take corrective action or an emissions standard prescribed in this permit is exceeded. DEQ may consider the frequency, duration, or magnitude of the deviations to determine if additional action is required.

Revised Permit Condition 3.6.1

The average steaming rate is defined as the running three-hour average of the steaming rates, as determined from the continuous steaming-rate recorded during the most recent compliance test. The average steaming rate shall not exceed 120% of the average steaming rate attained during the most recent compliance test conducted pursuant to this permit that demonstrates compliance with Permit Conditions 2.7 and 2.13. If the tested emission rate is above 0.066 gr/dscf at 8% oxygen, when combusting wood product, the maximum allowable steaming rate shall be limited to the steaming rate calculated using the following equation:

$$\text{Max. allowable avg. steam rate} = \frac{\text{(avg. steam rate during test x 0.08 gr/dscf at 8\% oxygen)}}{\text{(tested grain loading at 8\% oxygen)}}$$

The permittee may conduct additional compliance tests during the permit term to revise the allowable steaming rate, so long as the compliance tests conform to all requirements of this permit. Except during compliance testing, as provided for in Permit Condition 3.9, whenever the steaming rate exceeds the allowable steaming rate, the permittee shall take corrective action within a reasonable time, but no longer than 24 hours from the discovery of the exceedance, to bring the steaming rate to the allowable

rate or below. Deviations from this allowable operating rate shall not constitute a violation of this permit, unless the permittee fails to take corrective action or an emissions standard prescribed in this permit is exceeded. DEQ may consider the frequency, duration, or magnitude of the deviations to determine if additional action is required.

Original Permit Condition 3.7

The permittee shall conduct a particulate matter compliance test in accordance with Permit Condition 2.12 and General Provision 9. The test shall be conducted within 6 months of issuance of this permit to demonstrate compliance with Permit Conditions 2.7 and 2.13 and to establish the appropriate operating range for the power input (secondary voltage and current) for both of the ESP transformer/rectifier sets to assure continuous compliance with Permit Conditions 2.7 and 2.13.

Modified Permit Condition 3.7

The permittee shall conduct a particulate matter compliance test in accordance with Permit Condition 2.12 and General Provision 9. The compliance test shall be conducted within 6 months of issuance of this permit to demonstrate compliance with Permit Conditions 2.7 and 2.13.

This change was made to eliminate the concept of establishing a range of power input because with wood-fired boilers that have widely variable rates of particulate emissions during normal operation, the ESP power automatically decreases when low amounts of particulate are being processed and increases for higher amounts of particulate. Requiring a minimum power input would be equivalent to requiring some amount of particulate to be processed, rather than allowing particulate emissions to be reduced to minimal amounts. The ESP should be maintained and operated correctly to ensure that the power that is required at any given time will be supplied.

Original Permit Condition 3.9

The permittee may conduct additional compliance tests during the permit term to establish a higher steaming rate, so long as compliance with all applicable terms and conditions of this permit is demonstrated.

Revised Permit Condition 3.9

The permittee may conduct additional compliance tests during the permit term at steaming rates in excess of the rate established by Permit Condition 3.6.1 to establish a higher steaming rate, so long as compliance with all applicable terms and conditions of this permit is demonstrated.

This permit revision was made to be consistent with Permit Condition 3.6.1 which allows a higher steaming rate during testing to increase the allowable steaming rate.

Original Permit Condition 3.10

The permittee shall monitor and record the following information during each compliance test:

- *Visible emissions, using the methods and procedures contained in IDAPA 58.01.01.625*
- *Steam production rate, expressed as pounds of steam per hour (lb/hr)*
- *Wood-waste fuel analysis*
- *Power input to the ESP (the sum of the secondary voltage times secondary current for both transformer-rectifier (T/R) sets, or* $P = V_1I_1 + V_2I_2$)

Revised Permit Condition 3.10

The permittee shall collect a fuel sample for a wood waste fuel analysis and monitor and record the following information during each compliance test:

- *Visible emissions, using the methods and procedures contained in IDAPA 58.01.01.625*
- *Steam production rate, expressed as pounds of steam per hour (lb/hr)*
- *Power input to the ESP (the sum of the secondary voltage times secondary current for both transformer-rectifier (T/R) sets, or $P = V_1I_1 + V_2I_2$)*

Original Permit Condition 3.11

When operating, the permittee shall monitor and record hourly, the secondary voltage and amperage applied by each T/R set to the discharge electrodes. The voltage and amperage recorded shall be consistent with O&M manual units of measure. A compilation of the most recent five years of voltage and amperage records shall be kept at the facility and shall be made available to DEQ representatives upon request.

Revised Permit Condition 3.11

The average power input (secondary voltage times secondary current for both transformer – rectifier sets, or $P = V_1I_1 + V_2I_2$) is defined as the running three-hour average of the recorded power input levels. When operating, the permittee shall monitor and record the average power input every hour. The voltage and amperage recorded shall be consistent with O&M manual units of measure. A compilation of the most recent five years of voltage and amperage records shall be kept at the facility and shall be made available to DEQ representatives upon request.

Permit Condition 3.11 was reworded to include the definition of the average power input.

Original Permit Condition 3.12

Operation and Maintenance manuals shall be developed for the boiler, multiclone, and ESP within 60 days of issuance of this permit. The permittee shall have developed an O&M manual for the ESP according to manufacturer specifications and recommendations. This manual shall describe the methods and procedures that will be followed to assure the ESP is maintained in good working order and operated as efficiently as practical. The O&M manuals shall be updated as necessary and shall include, at a minimum, the most recent general descriptions of the equipment; the normal operating conditions and procedures for the boiler; startup, shutdown, and maintenance procedures; upset conditions guidelines; and corrective action procedures. After performance testing is completed in accordance with Permit Condition 3.7 which determines the operating range for the secondary power (voltage and current) for each of the T/R sets, this range shall be specified as the required operating range in the O&M manual for the ESP.

Revised Permit Condition 3.12

Operation and Maintenance manuals shall be developed for the boiler, multiclone, and ESP within 60 days of issuance of this permit. The permittee shall have developed an O&M manual for the ESP according to manufacturer specifications and recommendations. This manual shall describe the methods and procedures that will be followed to assure the ESP is maintained in good working order and operated as efficiently as practical. The O&M manuals shall be updated as necessary and shall include, at a minimum, the most recent general descriptions of the equipment; the normal operating conditions and procedures for the equipment; startup, shutdown, and maintenance procedures; upset conditions guidelines; and corrective action procedures.

The O&M manual requirements were modified (see the last sentence of the original condition) to show the elimination of the operating range requirement. It has been reworded as suggested by the Coeur d'Alene Regional Office with concurrence from Potlatch Corporation.

Permit Condition 3.13

Upon recommendation of the Coeur d'Alene Regional Office, the following permit condition was added:

Excursions

The permittee shall record all instances of excursions from the operating and maintenance methods and procedures outlined in the O&M manuals developed in accordance with permit condition 3.12. Excursions shall be recorded as any instance where the permittee fails to follow the methods and procedures detailed in the equipments O&M manual. A compilation of the most recent five years of excursions shall be kept at the facility and shall be made available to DEQ representatives upon request.

The original Permit Conditions 3.13 and 3.14 have been renumbered to Permit Conditions 3.14 and 3.15.

Permit Conditions 5.7 and 5.8 were deleted as they are already covered in the facility-wide section of the permit by Permit Conditions 2.9 and 2.10.

Permit Condition 5.7:

Exceedances

*The permittee shall submit a report to DEQ of any and all exceedances of any emission rate, visible emission, or operating requirement listed in this permit within a reasonable amount of time of the exceedance, in accordance with IDAPA 58.01.01.130. The certification shall state that, based on information and belief formed after reaso*nable inquiry, the statements and information in the document are true, accurate, and complete.

Permit Condition 2.9:

Excess Emissions

The permittee shall comply with the procedures and requirements of IDAPA 58.01.01.130-136 for excess emissions.

Permit Condition 5.8:

Certification of Documents

All documents, including, but not limited to, records, monitoring data, supporting information, testing reports, and compliance certifications submitted to DEQ shall contain a certification by a responsible official, in accordance with IDAPA 58.01.01 123. The certification shall state that, based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate, and complete.

Permit Condition 2.10:

Reports and Certifications

Any reporting required by this permit, including, but not limited to, records, monitoring data, supporting information, requests for confidential treatment, testing reports, or compliance certifications, shall contain a certification by a responsible official. The certification shall state that, based on information and belief formed after reasonable inquiry, the statements and information in the document(s) are true, accurate, and complete. Any reporting required by this permit shall be submitted to the following address:

Air Quality Permit Compliance
Department of Environmental Quality
Coeur d'Alene Regional Office
2110 Ironwood Parkway
Coeur d'Alene, ID 83814

7. PUBLIC COMMENT

In accordance with IDAPA 58.01.01.404.01.c, a public comment period on the proposed Tier II operating permit and application materials was provided. The public comment period started on April 7, 2005 and May 6, 2005. Comments regarding DEQ's proposed action were provided by Potlatch Corporation and from the Coeur d'Alene Regional Office.

8. RECOMMENDATION

Based on the review of the application materials, and all applicable state and federal regulations, staff recommends that DEQ issue final Tier II Operating Permit and Permit to Construct No. T2-040124. An opportunity for public comment on the air quality aspects of the proposed permit was provided in accordance with IDAPA 58.01.01.404.01.c.

CZ/sd Permit No. P-040124

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APPENDIX A

AIRS Form

AIRS/AFS[a] FACILITY-WIDE CLASSIFICATION[b] DATA ENTRY FORM

Facility Name: Potlatch Corporation
Facility Location: Milltown Road, St. Maries
AIRS Number: 009-00030

AIR PROGRAM POLLUTANT	SIP	PSD	NSPS (Part 60)	NESHAP (Part 61)	MACT (Part 63)	SM80	TITLE V	AREA CLASSIFICATION A-Attainment U-Unclassified N- Nonattainment
SO_2	B							U
NO_x	B							U
CO	A						A	U
PM_{10}	SM							U
PT (Particulate)	SM							U
VOC	A						A	U
THAP (Total HAPs)	B							
			APPLICABLE SUBPART					

[a] Aerometric Information Retrieval System (AIRS) Facility Subsystem (AFS)

[b] AIRS/AFS Classification Codes:

A = Actual or potential emissions of a pollutant are above the applicable major source threshold. For HAPs only, class "A" is applied to each pollutant which is at or above the 10 T/yr threshold, or each pollutant that is below the 10 T/yr threshold, but contributes to a plant total in excess of 25 T/yr of all HAPs.

SM = Potential emissions fall below applicable major source thresholds if and only if the source complies with federally enforceable regulations or limitations.

B = Actual and potential emissions below all applicable major source thresholds.

C = Class is unknown.

ND = Major source thresholds are not defined (e.g., radionuclides).